

65. *Troglodytes aëdon*. HOUSE WREN. — One of the most familiar and, next to the Robin, the best known bird of the resorts, especially at Wequetonsing, where it is held in undeserved esteem, being the rascal who, unsuspected, destroys other birds' eggs from sheer wantonness.

66. *Anorthura hyemalis*. WINTER WREN. — A fairly common inhabitant of all the woods, but much oftener heard than seen, his shrill, unmusical song reaching far through the quiet woods. Had fully grown young.

67. *Sitta carolinensis*. WHITE-BREASTED NUTHATCH. — Only a few individuals were noticed, occurring on same ground as the Red-breasted Nuthatch.

68. *Sitta canadensis*. RED-BREASTED NUTHATCH. — Met with in several places near Harbor Springs and at Roaring Brook; leading grown young July 12.

69. *Parus atricapillus*. CHICKADEE. — Pretty common; moving in family groups.

70. *Hylocichla fuscescens*. WILSON'S THRUSH. — Quite common and song often heard in early morning.

71. *Hylocichla aonalaschkæ pallasii*. HERMIT THRUSH. — Common and in full song, though feeding fledged young.

72. *Merula migratoria*. AMERICAN ROBIN. — The most conspicuous and best liked bird of the resorts, remarkably abundant and confiding, building nests on porches. Begins to sing at 3.45 A. M. with the House Wren, Song and Chipping Sparrows.

73. *Sialia sialis*. BLUEBIRD. — Fairly common on the farmland adjoining the resorts.

BIRDS OF THE ISLAND OF CARRIACOU.

BY JOHN GRANT WELLS.

Part 1. Water Birds.

CARRIACOU, a dependency of the Island of Grenada, is situated about twenty miles north of that island. It is mountainous, the highest peak, High North, being 980 feet, and next in height comes Chapcau Carré, to the southward, 960 feet. There are several natural harbors, notably Tyrell Bay, from which extends a deep lagoon where ships are docked for repairs, and where delicious oysters are obtained from the roots of the mangrove

trees on its borders. The hills have been much denuded of trees for the purpose of shipbuilding, many small craft, of from five to fifty tons, being continually built here. The island has an area of about thirteen square miles, and a population of 7000. There are no running streams in the island, the water supply being derived from a few natural springs and wells; rain water is also collected in tanks and ponds.

The following account of Carriacou, written in the year 1774, may prove of interest:—

“Carriouacou (its Carib name), about 20 miles in compass, and by those who should be best acquainted with it, represented as one of the fairest and finest spots in this part of America, enjoying a climate equally wholesome and pleasant, a soil wonderfully fertile, abounding with valuable timber, as well as fine fruit trees. But what distinguishes it most, and which induced more than one recommendation to the French Court, is its having a harbor as safe, as spacious, and as commodious as any that this part of the world can boast, and communicating by a narrow, though a deep channel, with a Lagune, in which, without any assistance from art, ships may careen very conveniently.”

Owing to the absence of forests in Carriacou, many of the birds found in the neighboring islands of St. Vincent and Grenada are not represented, but on the other hand, there being a large area of swamps and marshes, numbers of the aquatic and wading varieties are to be found, and the extensive pastures on the coast tempt many of the migratory species to visit the island, some stragglers of which remain all the year round. The low, scrubby ‘bush’ of the hillsides and the cultivated fields of pigeon peas and Indian corn, afford food and shelter to most of the resident birds, whilst the cliffs on the southern and southwestern sides of the island, as also the rocky islets off the coast, are the homes of numerous waterfowl.

From observations extending over a period of six years, I find that there are 39 resident birds and 33 migratory, or “partial residents,” thus comparing favorably with the larger island of Barbados, from which 82 species are recorded, of which only 15 are resident.

1. *Podilymbus podiceps* (Linn.). GREBE; DIVER.—This bird is not numerous; one or two may occasionally be found in the Lauriston and Union Swamps. It is very shy, and will dive immediately on the approach of any one, and as it is capable of remaining a considerable time under water, and has the habit of rising and just keeping its bill above the surface, it can easily evade notice.

2. *Larus atricilla* Linn. LAUGHING GULL; MAUVE.—This gull is a familiar figure all round the coast of the island; large flocks may often be seen sitting on the water, or attending the flocks of Pelicans and demanding their share of each bird's catch, which they often take from the mouth of the pelican, uttering their laughing cry all the while, which the fishermen declare to be *half, half, half*. As these gulls cannot dive, they have to depend for their food on the shoals of sprats and fry that come up to the surface, and they have been known to take large bites from the backs of a fish called corvally which swims near the surface in large numbers. After heavy falls of rain, when the pastures are covered with numerous rain pools, these gulls resort to them in numbers and feed on the earth worms which swarm in the pools; this may often be seen, especially in the Beausejour pasture. The birds are very fearless and tame and will allow any one to approach them quite closely; if one of the birds should be shot and wounded, others will hover over and around it, with cries of distress. They breed on the islets, Isle-de-large being a favorite one, in the months of May and June. No nest is made, the eggs, three to four, being laid on the bare rocks in little depressions, and occasionally in a tuft of grass. The nests are sometimes so numerous and close together that one can hardly walk about without treading on the eggs. When the young are hatched the parent birds go out at an early hour, with much noise, to their feeding places; about 5 A. M. they commence to fly in large numbers from Isle-de-large over Hermitage to the bays on the western side, and from 4 P. M. to dusk they keep returning, laughing and calling to each other all the while. They sometimes fly so low across the yard that they might be caught with the hand or struck with a stick.

The eggs, generally three and occasionally four in number, are dark buff with splashes of brown, sometimes forming a ring round the larger end; they measure 2.30×1.85 , 2.15×1.70 , 2.45×1.75 .

3. *Sterna maxima* Bodd. ROYAL TERN.—This beautiful bird is not numerous; seldom more than four or five are seen at a time, fishing and uttering occasionally a harsh grating note. They are fond of perching on buoys or floating bits of wood, the little logs which serve to mark the fish-pots being a favorite roost for them. They breed on the rocks; but I have hitherto been unsuccessful in procuring their eggs. As I write there are a few of them fishing in Hermitage Bay; it is interesting to watch their quick plunges at the fish.

4. *Sterna dougalli* Montag. ROSEATE TERN; CARRECT.—A few years ago these birds used to frequent Jack-a-dan Island, off the Port of

Hillsborough, in large numbers; they also used to breed there, but for some reason they have now deserted it, and seem to have made Frigate Island and Rose Rock their nesting places. I have taken their eggs there in May.

The habits of this bird are peculiar. It is most amusing to see them drop down perpendicularly into the sea and plunge under the surface and up again immediately with a small fish. They fish in flocks, and generally roost on the rocks about midday for a rest. Their note is a kind of screech.

The eggs are two in number, generally laid on the bare ground, but sometimes in a grass tuft.

5. *Sterna fuliginosa* Gmel. SOOTY TERN; TWAR-OO.—This bird is not abundant in Carriacou, though it breeds in numbers on the islets between this island and Grenada; a few may be seen at Bonaparte Rocks and Isle-de-large.

6. *Sterna anæthetus* Scop. BRIDLED TERN.—Numerous at all the little islands, notably at Rose Rock where they nest in colonies during the month of May, where I have taken several clutches of eggs. It is a graceful bird, swift of wing, and is sometimes met with far out at sea fishing, and occasionally sitting on the water in flocks like the Laughing Gull. Like the other members of the same family, they make hardly any nest, a tuft of grass, or a depression in the rock serving as a place for depositing its eggs. These are two in number, light grayish buff with dark brown spots and blotches. They measure 2.12×1.37 , 2.00×1.37 .

7. *Anous stolidus* Linn. NODDY TERN; MWEN.—These birds are to be met with all around the island, they nest at Isle-de-large, Rose Rock and White Island. At the eastern end of White Island is a conical hill where the Noddy congregates in large numbers. The hill is honey-combed and is just the place for it to deposit its eggs. I have taken several sets of eggs at Rose Rock and Isle-de-large in May; the colony at White Island is inaccessible.

The Noddy is not quite so stupid a bird as he has been described by some writers; it is true that he seems and looks very foolish whilst sitting on his nest, and one would imagine he could be taken by the hand, but just as you expect to hold him he will administer a sharp peck to your hand and fly away, leaving his nest to be despoiled.

The eggs are usually placed in a hole or depression in the rock, and contain from two to three eggs, of a pale gray, thickly spotted with brown.

8. *Puffinus auduboni* Finsch. DIABLOTIN.—Though not often seen, as it seldom leaves its hole in the daytime, this bird is very numerous, and lives in holes and under the rocks on most of our little islets, issuing forth at dusk to fish and returning at dawn. They make a most unearthly noise when leaving and returning to their nests, hence the name given to them by the fishermen, which literally means 'little devil.' Bonaparte Rocks are a favourite abode of these birds. When the young arrive at a certain stage they become simply a ball of fat enclosed in down; it is

then that the fishermen take them in large numbers and after salting and drying them, they are taken to the different markets in Grenada where they are readily bought and appear to be much relished by certain people. The following account of my discovery of this bird on Labaye Rock in April, 1888, will give a good description of it and its breeding habits.

About eight years ago numbers of dried birds used to be brought into the market at Grenville for sale; they were young birds and very fat. The men who sold them said they were the young of the Diablotin, and were caught in holes, on a small island to the eastward called Mouchoir Quarre. I endeavored to procure a live one but without avail, and in fact so many improbable stories were told concerning this bird, that I looked upon the 'Diablotin' as a myth, and concluded that the dried birds were the young of some species of gull. My interest in the matter has, however, been recently revived. On Easter Monday, 2nd April, 1888, I paid a visit to a small islet called Labaye Rock, about a mile off the Port of Grenville, a place where I had been on many previous occasions. On exploring the Rock, a young bird was discovered in a hole under a stone; it was covered with down, in fact it seemed like a ball of fat enclosed in down. One of the boatmen pronounced it to be a young Diablotin. This caused me to make a thorough search, with the happy result that I found an adult bird with a young one in one hole, and a full-grown female and one egg in another. The birds on being brought out into the light appeared to be quite foolish, and beyond a feeble attempt to bite seemed to make no effort to escape. I kept them alive for some days; they would take no food during the day, remaining perfectly quiet, but at night they fed on scraps of fish, and at intervals uttered a peculiar cry resembling a cat-howl. They evidently lay but one egg, as only one young was found in each nest, and the egg which I got was highly incubated; it is of a dull white color and measures 2.00×1.37 .

Col. Feilden discovered this bird breeding in Barbados about the same time, and Dr. Bryant's account of its breeding in the Bahamas, including size of egg, agrees closely with my account of the same.

9. *Oceanites oceanicus* (*Kuhl*). MOTHER CAREY'S CHICKEN.—This bird, which never appears to rest at all, is sometimes seen following in the wake of a sloop, especially if the winds are high, and a stormy sea running; it skims the tops of the waves, then sails down the hollow to mount the next, being quite at home 'on the ocean wave.'

Its breeding habits have not been determined owing to its rarity, and the fact of its not being seen to roost anywhere.

10. *Phaëthon æthereus* *Linn.* TROPIC BIRD; PAILLE-EN-QUEUE; BOAT-SWAIN.—This is a bold, strong bird, and it takes long flights, being met with many miles out at sea. It is remarkable for the long tail feathers, which have earned for it one of its local names, Paille-en-queue, or straw-in-tail. It frequents Frigate Island and Rose Rock, from which I have taken its eggs. It lays but one egg, placed in a deep hole. The bird is often taken alive whilst sitting, as it has no means of escape if the hand

is thrust into the hole, though it can administer a severe peck with its powerful beak, as I know from personal experience.

The egg is a large one, of a dull purple brown thickly scribbled and spotted with dark purple and brown.

11. *Sula sula* (Linn.). BOOBY; FOU.—This bird is not numerous in Carriacou, though large numbers of them inhabit Kik-en-jenny, a rock about ten miles distant; a few of them are seen in the bays around the coast. They are magnificent divers, plunging into the sea like a wedge and emerging a short distance off like a flash, and it is seldom that they miss their prey. They lay one egg only, on the bare ground; the egg is white.

12. *Pelecanus fuscus* Linn. BROWN PELICAN; GRAND-GORGE.—Very numerous all around the coast, in flocks of 5 to 50, sometimes sitting quietly on the water, or hovering over a shoal of sprats and diving one after the other with loud splashes. They turn right over when they dive, and on emerging from the water they elevate their bills and shake the fish from the pouch down their throats. It is whilst doing this that the Laughing Gull steals any little fish that shows from the pelican's bill, often perching on the pelican's head to enable it to reach the fish easier. I was under the impression that they nested on some of the outlying rocks, but have now determined that they resort to the coast of Florida to breed, during the months of February, March, and April. In May and June they begin to return in numbers, and the young of the year are easily distinguished by the lighter gray color and yellow 'down' on the head. They are 'early birds' at their fishing; from about 5 A. M. they may be seen diving, and some remain fishing until dusk. They roost both on trees and on the rocks. The flesh of the young birds is not to be despised as food, but the old birds are too fishy, though I have seen them eaten with avidity, after being skinned, by the people in the small islands. The skin of the breast is beautiful and makes elegant little mats for the table, and I have seen them made into caps; the pouch can be made into bags for tobacco and has been used to cover a small drum or tambourine.

13. *Fregata aquila* (Linn.). MAN-O'-WAR BIRD; FRIGATE.—This remarkable bird is a familiar figure; two or three may often be seen sailing majestically over the land, sometimes so high as to appear like black specks. They often hover over the sea and dart down to pick up fish near the surface (as they do not dive), or watch the Boobys fishing, ready to rob them of their prey. It is astonishing how quick this large bird is in its movements; it will pounce upon a booby that has secured a fish and is flying off with it, cause it to disgorge, and the fish will fall, but long before it can reach the water the Man-o'-war Bird has caught it. They may frequently be seen fighting in the air, particularly the old males, which are easily distinguished by the scarlet gular pouch; they fight desperately, opening and shutting the long forked tail like a pair of shears and uttering a grating cry.

They nest in colonies at Kick-en-jenny. They build a large platform of sticks on the figeur trees, and lay but one egg.

14. *Anas boschas* Linn. MALLARD.—A rare migrant that visits the island occasionally; I have shot one at Lauristan swamp, the only one seen.

15. *Nettion carolinensis* (Gmel.). GREEN-WINGED TEAL.—Numbers of these ducks arrive here in October and frequent the swamps and ponds; some of them remain till March when they become quite fat and are excellent for the table. They afford fine sport; I have shot numbers of them at Lauriston Pond, from January to March. A straggler or two may remain, but they generally leave before the middle of April.

16. *Querquedula discors* (Linn.). BLUE-WINGED TEAL; CERCELLE.—This little duck arrives in September and October, and flocks of 10 to 20 may be seen in the mangrove swamps; they also frequent the rain pools in the pastures and some of the ponds; they afford good sport and are in fine condition in the months of February and March. A few of them remain all the year, but I have no authentic account of their breeding here, though they do breed at Isle-de-Rhoude.

17. *Erismatura jamaicensis* (Gmel.). RUDDY DUCK; RED DIVER.—This duck is a resident, and breeds in Lauriston Pond. I have taken their eggs in January. The bright blue bill and chestnut plumage of the male bird make it conspicuous. They are very difficult to shoot, as at the least motion of the sportsman they will disappear under water, just sinking down as they sit, not diving like other ducks; they remain down a long while and will come to the surface a long way off, quietly appearing to rise up in the same manner as they sunk out of sight; and they will sink again immediately if they see anything suspicious. The female is of a sober mottled brown color.

18. *Ardea herodias* Linn. LARGE HERON; CRABIER MONTAIGNE.—This bird is not a resident; seldom more than one is seen at a time, though in October, 1896, after heavy rains and strong south winds, I saw eight of them in Harvey Vale pasture, which was then covered with water. They appeared to be young birds and to have alighted here owing to the stormy weather, as they had disappeared on the next day when the weather was clear. I shot a fine specimen at Frigate Island in May.

19. *Ardea candidissima* Gmel. WHITE GAULIN.—This bird is not common in Carriacou. I have observed but a few of them, and have not, of course, succeeded in procuring their eggs.

'White' Gaulins are numerous at certain seasons, but they are the young of the Blue Gaulin.

20. *Ardea cærulea* Linn. BLUE GAULIN.—A common bird wherever swamps or rain pools occur. They nest on the small islets; several nests are occasionally placed on the same tree. The nest is only a platform of dry sticks, through which the eggs can be seen from below. Their eggs are two and sometimes three or four in number, of a beautiful bluish green, and measure 1.66×1.32 .

The young are pure white, and attain full size before the change of plumage takes place; then they may be observed in all stages of the transition, from a few blue feathers to a few white, until the pure blue slate of the adult is reached.

21. *Ardea virescens* Linn. HVALLEE; LITTLE CRABIER.—Numerous about the swamps. It is a prettily marked bird, and the deep orange color of the legs makes it conspicuous as it takes wing on being flushed.

Nest, a few dry sticks, in which are laid two blue-green eggs, measuring 1.42×1.10 to 1.32×1.02 .

22. *Nycticorax violaceus* (Linn.). CRABIER; NIGHT HERON.—This bird is numerous in Carriacou; bold and fearless, he is found all round the coast, and at night its loud *quok* is rather startling to the timid traveler.

It nests in the mangroves, laying three blue-green eggs, measuring 2.10×1.48 to 2.12×1.50 .

23. *Porzana carolina* (Linn.). SORA RAIL.—This bird is a migrant, but a straggler or two may remain during the year. It is a lively little bird, generally found on the borders of the ponds and rain pools; its habit of flicking up its tail attracts attention to it.

24. *Ionornis martinica* (Linn.). PURPLE GALLINULE; HASCAMIOL.—Very numerous at Isle-de-large and Saline Island; a few seen about the ponds at Carriacou. They are caught in fish-pots baited with corn, and also by dogs. They are smartly colored birds, their purple, green and brown plumage, red bill and bright yellow legs, making them conspicuous. They do damage to the Indian corn, as they climb up the stalks and eat the ears; they also climb and eat plantains and bananas.

25. *Gallinula galeata* (Licht.). RED-HEAD WATERFOWL.—The large extent of mangrove swamps in Carriacou, the natural home of this bird, makes it very abundant; its note may be heard from morn to eve as one rides along the road between Lauriston and Hillsborough. On entering the swamp numbers may be seen, some with a brood of six or eight chicks swimming behind her; they all make for cover amongst the roots of the mangroves at the least alarm.

The bright red frontal shield of this bird, and the white feathers under the tail, which it keeps flicking up whilst it swims, are conspicuous.

The eggs, from 4 to 6 in number, are light buff splashed with brown.

26. *Fulica americana* Gmel. COOT; WHITE-HEAD WATER-FOWL.—This bird is excessively shy, and will dive on the least alarm, and continue diving until security is reached in the rushes or roots on the borders of the swamps, which are its home. I have seen as many as fifty of these birds in Lauriston swamp during the dry season, when only a small quantity of water remains in the deepest pool; here they congregate and may be shot in numbers, by creeping to the borders before sunrise. As a rule they dive at the report of the gun, but many will skim along the surface of the water leaving a wake behind, and occasionally one will rise, on the wing. They build a thick nest of water weeds, the bottom often resting on the water; the eggs number from six to eight.

27. *Gallinago delicata* (Ord). WILSON'S SNIPE.—Rare migrant, seen during September and October.

28. *Micropalama himantopus* (Bonap.). STILT SANDPIPER.—A few arrive during migration.

29. *Tringa maculata* Vieill. PECTORAL SANDPIPER; GRASS BIRD.—Arrive in considerable numbers at the end of September and during October; they frequent the pastures, become very fat, and are excellent eating.

30. *Tringa minutilla* Vieill. LEAST SANDPIPER.—A few visit the island in September.

31. *Tringa ferruginea* Brünn. CURLEW SANDPIPER.—Small numbers arrive in September and October.

32. *Ereunetes pusillus* (Linn.). SEMIPALMATED SANDPIPER.—Large numbers arrive from August to October; frequent the mud flats and sea-shore; stragglers may be seen up to May.

33. *Calidris arenaria* (Linn.). SANDERLING.—A few visit the island during migration.

34. *Limosa fedoa* (Linn.). MARBLED GODWIT.—A rare migrant; one or two arrive with the first flight of Yellow-legs.

35. *Totanus melanoleucus* (Gmel.). LARGE YELLOW-LEGS; PIKER.—Large flocks arrive in September and October; they afford good sport, and are relished at the table.

36. *Totanus flavipes* (Gmel.). SMALL YELLOW-LEGS.—Large numbers at usual migration season; stragglers may be seen all the year through.

37. *Symphemia semipalmata* (Gmel.). WILLET.—An occasional visitor during migration.

38. *Bartramia longicauda* (Bechst.). COTTON-TREE PLOVER.—Small numbers arrive during September and October; they are very shy, and run along the ground very fast; they afford good sport and are excellent for the table.

39. *Actitis macularia* (Linn.). SPOTTED SANDPIPER.—Arrive from August to October; a few stragglers remain all the year round; frequent the sea shore, and mud pools.

40. *Numenius hudsonicus* Lath. LARGE CURLEW.—A few of these visit the island during migration; have shot them at Grand Anse swamp.

41. *Numenius borealis* (Forst.). CURLEW.—Comes in with the Plovers, but remains for only a few days.

24. *Charadrius squatarola* (Linn.). GRAY PLOVER.—Small numbers arrive in September and October.

43. *Charadrius dominicus* Müll. GOLDEN PLOVER.—Large numbers of this game bird used to visit the island, but now that the pastures are being neglected and allowed to be overgrown with accacia, they are becoming fewer every year, and will probably cease to alight here in future. They afford fine sport, and after a few weeks become very fat and are considered a great delicacy.

44. *Ægialitis vocifera* (Linn.). KILLDEER PLOVER. — A rare migrant, seldom more than one seen.

45. *Ægialitis semipalmata* (Bonap.). RING-NECK PLOVER. — This pretty little bird arrives in August and September; it frequents the sand-beach in flocks of three to six, and runs along at considerable speed, uttering its plaintive call note.

46. *Arenaria interpres* (Linn.). TURNSTONE. — Numbers arrive at the migration season; they frequent the seashore, and may be found amongst the débris cast up by the sea. A few remain all the year. I have seen them on the sands of Dumfries and Belvue South at all seasons, and also on the mud flats at Grand Anse. I observed one at the lagoon perched on the mangrove roots eating small oysters.

(To be concluded.)

NOTES ON THE SPECIALIZED USE OF THE BASTARD WING.

BY WM. HUBBELL FISHER.

Plate VIII.

IN A book entitled 'The Structure and Life of Birds,' by F. M. Headley, M. A., F. Z. S., published by Macmillan & Co., London and New York, 1895, the author states that he saw a pigeon "when checking his speed in air, lift the bastard wing so that daylight was visible between it and the long feathers, this petty appendage jutting out and impudently spoiling the beautiful line of the front margin of the wing from tip to tip." He further says that "this curious phenomenon may be seen if you stand at the British Museum (the Antiquarian Department at Bloomsbury), as the pigeons which are usually feeding in large numbers in the front fly up and settle overhead on the pediment." He adds that "in Muybridge's photographs of the Cockatoo, on the wing, both bastard wings may be seen to be slightly raised, for what purpose it is hard to say. In the pigeon, they project during a vigorous stroke, but I have seen no other bird use them either for stopping or striking." On page 254 of his work, figure 65, Mr. Headley